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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,232	08/27/2001	Hideaki Yoshida	01519/LH	5280

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT PAPER NUMBER

2623

DATE MAILED: 01/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/941,232

Applicant(s)

YOSHIDA, HIDEAKI

Examiner

Virginia M Kibler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5,7,9,10,12,15,16,18,21-23 and 25-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,7,9,10,12,15,16,18,21-23 and 25-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11112004, 12012004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment received on 11/11/04 has been entered. Claims 2, 3, 5, 7, 9, 10, 12, 15, 16, 18, 21-23, and 25-45 remain pending.

Response to Arguments

2. Applicant's arguments filed 11/11/04 have been fully considered but they are not persuasive.

Summary of Applicant's Argument: Furuhashi does not disclose that outer frames are added to left and right images. Furuhashi does not disclose the image frame setting means for setting a plurality of monocular image frames nor the stereo image generation means for generating a multocular stereo image as recited in claim 45.

Examiner's Response: Furuhashi discloses forming a predetermined frame line on boundary regions of the plurality of monocular images to form predetermined frame line regions which correspond to outer frames (Para. 0020, 0025-0027; Drawings 2, 5, and 6) as recited in the claims. Furuhashi discloses image frame setting means for setting a plurality of monocular image frames corresponding to a plurality of monocular images as building components of one multocular stereo image in an imaging area of the pickup unit by executing a predetermined trimming process of the object image signal (Drawing 2; Para. 0025-0026) and stereo image generation means for generating a multocular stereo image having a predetermined data structure on the basis of a plurality of monocular images obtained in correspondence with the plurality of imaging frames (Para. 0026-0027; Drawings 1 and 2). Note, on page 20 of the applicant's

specification, a 100% trimming process is disclosed in which the imaging area is vertically divided into two regions.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 5, 7, 9, 10, 12, 15, 16, 18, 21-23, and 25-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima et al. (US 6,574,423) in view of Furuhashi (JP 09-224264).

Regarding claim 42, Oshima et al. ("Oshima") discloses all image data including all pieces of image information of the plurality of monocular images, and stereo data as information which pertains to a construction as a stereo image except for the image information are inseparably arranged in construction units of a single file (Col. 5, lines 8-65; Figure 49). Oshima discloses all the image data form parallel layout type stereo image data obtained by arranging the respective pieces of information of the plurality of monocular images at different positional regions on one 2-D image (Col. 4, 62-67, Col. 5, lines 1-51). Oshima does not appear to recognize the parallel layout type stereo image data is obtained by forming predetermined frame line on boundary regions of the monocular images. However, Furuhashi discloses forming a predetermined frame line on boundary regions of the monocular images (Drawing 2) to form predetermined frame line regions which correspond to outer frames (Drawings 2, 5, and 6; Para.

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0020, 0025-0027). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the parallel layout type stereo image data disclosed by Oshima to include forming a predetermined frame line on boundary regions of the monocular images. The motivation for doing so would have been because it is well known in the art and provides a division between the left and right images. Therefore, it would have been obvious to combine Oshima with Furuhashi to obtain the invention as specified in claim 42.

Regarding claims 43 and 44, Oshima discloses an image data generation step of generating all image data containing all pieces of image information of the plurality of monocular images (Col. 4, lines 62-67, Col. 5, lines 1-4), a stereo data generation step of generating stereo data as information which pertains to a construction of a stereo image except for the image information (Col. 6, lines 4-55), and the image file generation step of generating a single digital image file by combining all the image data and stereo data as the digital stereo image file (Col. 5, lines 8-65; Figure 49). The arguments analogous to those presented above for claim 42 are applicable to claims 43 and 44.

Regarding claim 45, Oshima discloses a data structure of a multocular digital stereo image file which is formed by a plurality of monocular images of different viewpoints (Col. 4, lines 62-67, Col. 5, lines 1-4) and is recorded as digital data (Col. 5, lines 8-65). The arguments analogous to those presented above for claim 42 are applicable to claim 45. Oshima does not disclose a stereo imaging optical system as specified in claim 20. However, Furuhashi discloses a stereo imaging optical system for receiving light rays coming from an object at different positions corresponding to parallax, and guiding the received light rays toward different regions of a pickup unit; imaging means for obtaining an object image signal on the basis of the output

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from the pickup unit (Drawing 1; Para. 0018-0028); image frame setting means for setting a plurality of monocular image frames corresponding to a plurality of monocular images as building components of one multocular stereo image in an imaging area of the pickup unit by executing a predetermined trimming process of the object image signal (Drawing 2; Para. 0025-0026); and stereo image generation means for generating a multocular stereo image having a predetermined data structure on the basis of a plurality of monocular images obtained in correspondence with the plurality of imaging frames (Para. 0026-0027; Drawings 1 and 2). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the stereo data disclosed by Oshima to include an optical system to obtain the data. The motivation for doing so would have been because it is well known in the art and it would expand the versatility of the system to include a means for generating the stereo data. Therefore, it would have been obvious to combine Oshima with Furuhata to obtain the invention as specified in claim 45.

Regarding claim 2, Oshima discloses the stereo data contains identification information indicating whether or not the image file is a stereo image file (Col. 6, lines 4-38), information used to reproduce the respective monocular images from all the pieces of image information (Col. 7, lines -13), and information associated with a layout of the monocular images (Col. 8, lines 27-44).

Regarding claim 3, Oshima discloses the stereo data is described in a header field of the image file (Figure 49).

Regarding claim 5, Oshima discloses the monocular images include two, right and left images corresponding to binocular view of right and left eyes, and the parallel layout type stereo

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image data is a stereo image pair in which the right and left images are at one of right and left positions and the other of the right and left positions (Col. 4, lines 62-67, Col. 5, lines 1-51).

Regarding claim 7, the arguments analogous to those presented above for claim 1 are applicable to claim 7. Oshima discloses a recording medium (Abstract).

Regarding claims 9, 10, and 12, the arguments analogous to those presented above for claims 2, 3, and 5 are applicable to claims 9, 10, and 12, respectively.

Regarding claims 15, 16, and 18, the arguments analogous to those presented above for claims 2, 3, and 5 are applicable to claims 15, 16, and 18, respectively.

Regarding claim 21, the arguments analogous to those presented above for claim 45 are applicable to claim 21. Furuhashi discloses the trimming process in which two images are simply divided by trimming, thereby executed by the imaging frame setting means is done at identical vertical and horizontal trimming ratios with reference to 100% trimming as a trimming state when the plurality of monocular image frames occupy a maximum region (Drawing 2).

Regarding claim 22, the arguments analogous to those presented above for claim 45 are applicable to claim 22. Furuhashi discloses the stereo imaging optical system is prepared by attaching before a single-lens imaging optical system a stereo adapter as an optical system for splitting a single field of view of the imaging optical system into a plurality of fields of view having a predetermined parallax (Drawing 1).

Regarding claim 23, the arguments analogous to those presented above for claim 45 are applicable to claim 23. Furuhashi discloses the stereo imaging optical system is a binocular type stereo optical system having a pair of right and left optical axes (Drawing 1).

Regarding claim 25, Oshima discloses a plurality of monocular images (Col. 4, lines 62-67, Col. 5, lines 1-4), but does not appear to recognize the images are input from independent image files. However, it is well known to provide images from independent image files to form a stereo image. Therefore, it would have been obvious for one of ordinary skill in the art to have specified the images disclosed by Oshima to be input from independent image files. The motivation for doing so would have been to expand the versatility of the system to encompass obtaining the monocular images from independent image files.

Regarding claim 26, 30, and 34, Oshima discloses generating a single stereo image using first and second monocular images (Col. 4, lines 62-67, Col. 5, lines 1-4), and header information which contains an item indicating the first and second monocular images are contained in the image data (Figure 49), an item indicating that the first and second monocular images belong to a single stereo image (Figure 4), and an item associated with addresses of the first and second monocular images (Figure 4), and is inseparable from the image data (Figure 49; Col. 5, lines 8-65). Oshima does not appear to recognize that the images are formed via a first and second optical axes having a span substantially corresponding to parallax. However, Furuhashi discloses generating a single stereo image by first and second monocular images formed via first and second optical axes having a span substantially corresponding to parallax (Drawing 1) wherein the image data is obtained by forming predetermined frame line regions of the first and second monocular images (Para. 0020, 0025-0027; Drawings 2, 5, and 6). Oshima and Furuhashi are combinable because they are from the same field of endeavor of stereoscopic images. At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the stereo image disclosed by Oshima to specify forming via first and

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second optical axes having a span substantially corresponding to parallax. The motivation for doing so would have been because it is a well known standard in the art and it is routinely utilized as a method for forming a stereo image. Therefore, it would have been obvious to combine Oshima with Furuhashi to obtain the invention as specified in claims 26, 30, and 34.

Regarding claim 38, the arguments analogous to those presented above for claim 26 are applicable to claim 38. Oshima does not appear to specify an optical system or a single pickup unit. However, Furuhashi discloses an optical system which has right and left optical axes substantially corresponding to parallax and forms object images (Drawing 1) and a single pickup unit for generating one image data corresponding to a single stereo image on the basis of right and left monocular images formed thereon via the optical system (Para. 0020, Drawings 1 and 2). At the time of the invention, it would have been obvious to one of ordinary skill in the art to have modified the stereo data disclosed by Oshima to include an optical system to obtain the data. The motivation for doing so would have been because it is well known in the art and it would expand the versatility of the system to include a means for generating the stereo data. Therefore, it would have been obvious to combine Oshima with Furuhashi to obtain the invention as specified in claim 38.

Regarding claims 27, 31, 35, and 39, the arguments analogous to those presented above for claims 26 and 38 are applicable to claims 27, 31, 35, and 39. Furuhashi discloses the first and second monocular images are 2-D images which are arranged side by side to form a single stereo image (Drawing 2).

Regarding claims 28, 29, 32, 33, 36, 37, 40, and 41, the arguments analogous to those presented above for claim 21 are applicable to claims 28, 29, 32, 33, 36, 37, 40, and 41. It would

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have been obvious to one of ordinary skill in the art to have modified the first and second monocular images disclosed by Oshima to include trimming as taught by Furuhata. The motivation for doing so would have been because it divides the image into two regions corresponding to the left and right eye in order to obtain a stereo image.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Virginia Kibler can be reached on (703) 306-4072. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Virginia Kibler
1/12/05

MEHRDAD DASTOURI
PRIMARY EXAMINER

